

WE CLAIM:

1 1. A television audience measurement system for
2 identifying a viewer selected television program from among
3 a plurality of television programs simultaneously broadcast
4 in a broadcast channel, the television audience measurement
5 system comprising:

6 a channel detector that detects the broadcast
7 channel in which the plurality of television programs is
8 broadcast; and,

9 a comparator that sequentially compares an audio
10 component of the plurality of television programs broadcast
11 in the detected broadcast channel with an audio signal of
12 the viewer selected television program so as to identify the
13 viewer selected television program.

1 2. The television audience measurement system of
2 claim 1 wherein the audio signal is detected by a microphone
3 disposed adjacent a television display.

1 3. The television audience measurement system of
2 claim 1 wherein the audio signal is detected by an intrusive
3 connection into equipment related to television viewing.

1 4. The television audience measurement system of
2 claim 1 further comprising a program identification datum
3 detector that detects, from the viewer selected television
4 program, a program identification datum indicative of an
5 identity of the viewer selected television program.

1 5. The television audience measurement system of
2 claim 4 wherein the program identification datum detector
3 comprises a software agent resident in equipment related to
4 television viewing.

1 6. The television audience measurement system of
2 claim 5 wherein the software agent is arranged to search for
3 the program identification datum.

1 7. The television audience measurement system of
2 claim 4 wherein the audio signal is detected by a microphone
3 disposed adjacent a television display.

1 8. The television audience measurement system of
2 claim 4 wherein the audio signal is detected by an intrusive
3 connection into equipment related to television viewing.

9. The television audience measurement system of claim 4 wherein the comparator is arranged to sequentially compare the audio component of the plurality of television programs broadcast in the detected broadcast channel with the audio signal of the viewer selected television program so as to identify the viewer selected television program if the program identification datum detector is unable to detect a program identification datum indicative of an identity of the viewer selected television program.

10. The television audience measurement system of claim 1 further comprising a software agent arranged to detect, from the viewer selected television program, a data element indicative of an identity of the viewer selected television program.

11. The television audience measurement system of claim 10 wherein the software agent is arranged to search for a program identification datum indicative of an identity of the viewer selected television program.

12. The television audience measurement system of claim 4 wherein the comparator is arranged to sequentially compare the audio component of the plurality of television programs broadcast in the detected broadcast channel with the audio signal of the viewer selected television program so as to identify the viewer selected television program if the program identification datum detector is unable to detect a program identification datum indicative of an identity of the viewer selected television program.

13. A television audience measurement system for digital television equipment, wherein the digital television equipment is disposed in a statistically selected location, the television audience measurement system comprising:

a software agent adapted to read, from a data packet contained in digital television programming, a datum identifying a television program, wherein the software agent is stored in memory associated with the digital television equipment;

an interface and communication apparatus adapted to transmit the identification datum to a remotely located central office.

1 14. The television audience measurement system of
2 claim 13 wherein the digital television equipment comprises
3 a receiver having a tuner, a microprocessor, memory, an
4 operating system, and a video display unit.

1 15. The television audience measurement system of
2 claim 13 wherein the digital television equipment is a set
3 top box providing an analog television signal to an analog
4 receiver.

1 16. The television audience measurement system of
2 claim 13 wherein the digital television equipment comprises
3 a set top box providing a digital television signal to a
4 digital receiver.

1 17. The television audience measurement system of
2 claim 13 wherein the digital television equipment comprises
3 a set top box and a monitor.

1 18. The television audience measurement system of
2 claim 13 wherein the digital television equipment comprises
3 a personal computer provided with a television receiver.

1 19. The television audience measurement system of
2 claim 13 wherein the digital television equipment includes a
3 VCR.

1 20. The television audience measurement system of
2 claim 13 wherein the digital television equipment includes a
3 digital versatile disk player.

1 21. The television audience measurement system of
2 claim 13 further comprising a person identification appara-
3 tus.

1 22. The television audience measurement system of
2 claim 13 wherein the identification datum is a program
3 identification code of a television program.

1 23. The television audience measurement system of
2 claim 13 wherein the identification datum comprises a pro-
3 gram name.

1 24. The television audience measurement system of
2 claim 13 wherein the identification datum comprises an
3 address of an Internet page.

1 25. The television audience measurement system of
2 claim 13 wherein the identification datum comprises an
3 identification code of an Internet page.

1 26. The television audience measurement system of
2 claim 13 wherein the identification datum comprises a banner
3 of material viewed by an audience.

1 27. The television audience measurement system of
2 claim 13 wherein the identification datum comprises a signa-
3 ture extracted from a television program viewed on the
4 digital television equipment.

1 28. The television audience measurement system of
2 claim 13 wherein the software agent is arranged to detect
3 window activities conducted by an audience.

1 29. The television audience measurement system of
2 claim 13 wherein the interface and communication apparatus
3 includes a serial port.

1 30. The television audience measurement system of
2 claim 13 wherein the interface and communication apparatus
3 includes a parallel port.

1 31. The television audience measurement system of
2 claim 13 wherein the interface and communication apparatus
3 includes a universal serial bus.

1 32. The television audience measurement system of
2 claim 13 wherein the interface and communication apparatus
3 includes a firewire.

1 33. The television audience measurement system of
2 claim 13 wherein the interface and communication apparatus
3 is arranged to send the identification datum to an Internet
4 service provider via the Internet.

1 34. The television audience measurement system of
2 claim 13 wherein the interface and communication apparatus
3 includes an intermediate data collector.

1 35. The television audience measurement system of
2 claim 34 wherein the intermediate data collector includes a

3 store and forward device, and wherein the store and forward
4 device is arranged to send the identification datum to the
5 central office via a telephone line.

1 36. The television audience measurement system of
2 claim 34 wherein the intermediate data collector is an
3 Internet service provider.

1 37. The television audience measurement system of
2 claim 34 wherein the intermediate data collector is a data
3 collection facility located in the central office.

1 38. The television audience measurement system of
2 claim 13 wherein the software agent is a software agent
3 downloaded to the memory associated with the digital televi-
4 sion equipment.

1 39. The television audience measurement system of
2 claim 13 wherein the software agent is a plug in software
3 agent of the digital television equipment.

1 40. The television audience measurement system of
2 claim 13 wherein the software agent is a floppy disk soft-
3 ware agent of the digital television equipment.

1 ~~41.~~ A television audience measurement system for
2 identifying a viewer selected television program from among
3 a plurality of television programs broadcast as a time
4 division multiplexed sequence of data packets in a broadcast
5 channel, the viewer selected television program being dis-
6 played on a television display in a statistically selected
7 location, the television audience measurement system com-
8 prising:

9 receiving means for receiving the time division
10 multiplexed sequence of data packets in the broadcast chan-
11 nel;

12 acquiring means for acquiring an audio portion of
13 the viewer selected television program;

14 recovering means for recovering audio components
15 respectively corresponding to the television programs con-
16 tained in the sequence of data packets; and,

17 comparing means for comparing the audio components
18 to the audio portion in order to determine the viewer se-
19 lected television program.

1 42. The television audience measurement system of
2 claim 41 wherein the acquiring means comprises a sensor
3 arranged to acquire a representation of a speaker signal
4 from a speaker associated with the television display.

1 43. The television audience measurement system of
2 claim 41 wherein the acquiring means comprises a connection
3 to audio processing circuitry associated with the television
4 display.

1 44. The television audience measurement system of
2 claim 41 wherein the receiving means comprises;

3 an intermediate frequency probe arranged to ac-
4 quire an intermediate frequency signal from a viewer con-
5 trolled tuner associated with the television display; and,

6 demodulating means for demodulating the intermedi-
7 ate frequency signal in order to receive the data packets.

1 45. The television audience measurement system of
2 claim 41 wherein the receiving means comprises:

3 a local oscillator frequency probe arranged to
4 pick up a local oscillator frequency signal from the televi-
5 sion display;

6 means for identifying the broadcast channel from
7 the local oscillator signal;

8 wherein the recovering means recovers the audio
9 components from television programs contained in the identi-
10 fied broadcast channel; and,

11 wherein the comparing means compares the audio
12 components to the representation of the speaker signal in
13 order to determine the viewer selected television program.

1 46. The television audience measurement system of
2 claim 41 wherein the receiving means comprises a scanning
3 receiver arranged to scan each of a plurality of broadcast
4 channels and to receive a corresponding plurality of time
5 division multiplexed television programs from each of the
6 plurality of broadcast channels.

1 47. The television audience measurement system of
2 claim 41 further comprising identifying means for identify-

3 ing persons in an audience of the viewer selected television
4 program.

1 48. A television audience measurement system for
2 measuring viewing of a television program viewed on digital
3 television located in a statistically selected site compris-
4 ing:

5 detecting means for detecting an audio code embed-
6 ded in the television program in order to identify the
7 television program;

8 extracting means for extracting an audio signature
9 from the television program in order to identify the televi-
10 sion program;

11 a software agent arranged to identify the televi-
12 sion program; and,

13 selecting means for selecting at least one of the
14 detecting means, the extracting means, and the software
15 agent in order to identify the television program.

1 49. The television audience measurement system of
2 claim 48 further comprising retrieving means for retrieving
3 an audience measurement data packet from a television set in
4 order to identify the television program, wherein the se-

lecting means selects at least one of the retrieving means,
the detecting means, the extracting means, and the software
agent in order to identify the television program.

50. A method of identifying a television program
selected by a viewer from a set of television programs
broadcast as multiplexed data packets in a viewer selected
broadcast channel, the viewer selected television program
being displayed on a display portion of an apparatus tuned
to the viewer selected broadcast channel, the method com-
prising the steps of:

- a) determining the viewer selected broadcast
channel;
- b) acquiring an audio portion of the viewer
selected television program;
- c) selecting an audio component associated with
one of the set of television programs broadcast in the
viewer selected broadcast channel;
- d) comparing the audio portion with the audio
component in order to determine whether the audio portion
and the audio component match;

18 e) if the audio portion and the audio component
19 match, storing a tuning record from at least one of the
20 audio portion and the audio component; and,

21 f) if the audio portion and the audio component
22 do not match, repeating steps (c) through (f) until either a
23 match is found or the set of television programs is ex-
24 hausted.

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1 51. The method of claim 50 wherein step a) com-
2 prises the step of determining the viewer selected broadcast
3 channel by use of a channel detector associated with the
4 apparatus.

1 52. The method of claim 51 wherein step b) com-
2 prises the step of acquiring the audio portion of the viewer
3 selected television program by use of an audio probe adja-
4 cent the apparatus.

1 53. The method of claim 52 wherein step c) com-
2 prises the step of selecting the audio component by use of a
3 digital tuner that is not a portion of the apparatus.

1 54. The method of claim 50 wherein step b) com-
2 prises the step of acquiring the audio portion of the viewer
3 selected television program by use of an audio probe adja-
4 cent the apparatus.

1 55. The method of claim 54 wherein step c) com-
2 prises the step of selecting the audio component by use of a
3 digital tuner that is not a portion of the apparatus.

1 56. The method of claim 50 wherein step c) com-
2 prises the step of selecting the audio component by use of a
3 digital tuner that is not a portion of the apparatus.

57. A method of identifying a viewer selected television program from among a plurality of time overlapped television programs broadcast in a viewer selected broadcast channel, wherein the viewer selected television program is displayed in a first window of a multi-window television display, wherein a file is also broadcast in the viewer selected channel so as to be time overlapped with the viewer selected television program, wherein the viewer selected television program and the data file contain respective labels, wherein material from the file is displayed in a second window of the multi-window display, and wherein the method comprises the steps of:

- a) reading, from the file, the respective file label and an identifying datum;
- b) finding the television program label associated with the respective file label; and,
- c) storing a time-stamped record comprising the identifying datum.

58. The method of claim 57 wherein the file is a data file.

1 59. The method of claim 57 wherein the file is an
2 image file.

1 60. The method of claim 57 wherein the file is
2 logically related to the viewer selected television program,
3 wherein the television program label and the file label are
4 indicative of the logical relation, and wherein step com-
5 prises the step of finding, from the logical relation, the
6 television program label associated with the respective data
7 file label.

1 61. A software agent stored in memory associated
2 with digital television equipment, wherein the software
3 agent is arranged to acquire television audience measurement
4 data relative to the digital television equipment, the
5 software agent comprising:

6 first logging means for logging a television
7 program identification datum identifying a television pro-
8 gram selected for viewing on the digital television equip-
9 ment;

10 second logging means for logging an identification
11 datum associated with data corresponding to the television

12 program selected for viewing on the digital television
13 equipment; and,

14 third logging means for logging an Internet iden-
15 tification datum associated with an Internet task of the
16 digital television equipment.

1 62. An apparatus for identifying a viewer se-
2 lected television program from among a plurality of time
3 overlapped television programs broadcast in a viewer se-
4 lected broadcast channel and received by digital television
5 program reception equipment, wherein the digital television
6 program reception equipment has a data port, the apparatus
7 comprising:

8 reading means connected to the data port for
9 reading program identifying data from among data provided on
10 the data port; and,

11 storing means for storing the program identifying
12 data.

1 63. The apparatus of claim 62 wherein the digital
2 television program reception equipment is a digital con-
3 verter.

1 64. The apparatus of claim 62 wherein the digital
2 television program reception equipment is a personal com-
3 puter.

1 65. The apparatus of claim 62 wherein the digital
2 television program reception equipment is a digital televi-
3 sion set.

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1 66. An apparatus for identifying a viewer se-
2 lected television program from among a plurality of time
3 overlapped television programs broadcast in a viewer se-
4 lected broadcast channel and received by digital television
5 program reception equipment, wherein the digital television
6 program reception equipment has a data port, the apparatus
7 comprising:

8 reading means connected to the data port for
9 reading program identifying data from among data provided on
10 the data port; and,

11 communicating means for communicating the program
12 identifying data to a remote point.

1 67. The apparatus of claim 66 wherein the digital
2 television program reception equipment is a digital converter.

1 68. The apparatus of claim 66 wherein the digital
2 television program reception equipment is a personal com-
3 puter.

1 69. The apparatus of claim 66 wherein the digital
2 television program reception equipment is a digital televi-
3 sion set.

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